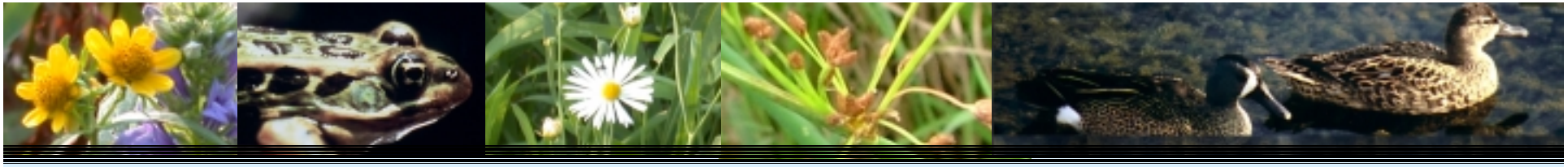
Wisconsin Wetland Compensatory Mitigation

November 18, 2005

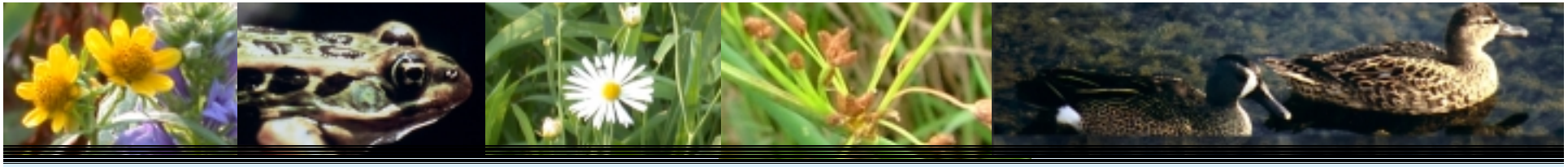
Compensation Sites: Performance Standards and Monitoring Plan



Definitions

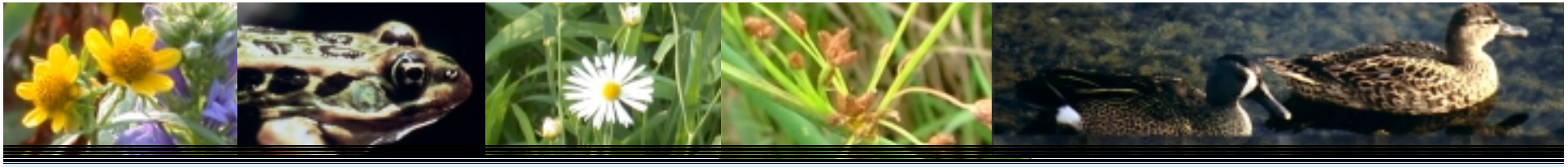
Performance Standards: The list of quantifiable measures or objectives identified for a compensation site in the compensation site plan, agreed to in advance by the project sponsor and permitting agency, that must be met before a compensation site can be deemed “established.”

Monitoring Plan: A specific program of data collection, conducted, analyzed, and reported by a project proponent or bank sponsor, which documents the physical, biological, hydrological, and human-use characteristics of compensation site wetlands.



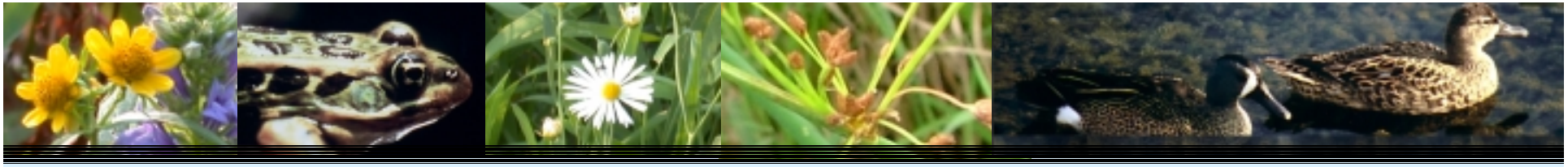
What is the link?

The monitoring plan must be geared towards providing evidence on whether or not the performance standards have been met



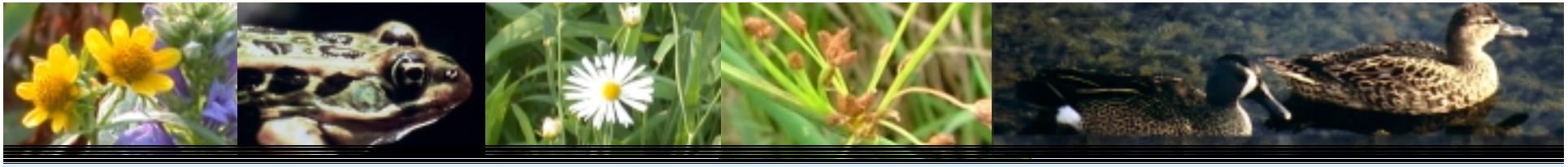
What about that "Goals and Objectives" Section?

- Goals are descriptive statements about the system you hope to establish
  - What wetland community or communities are planned?
  - What functional values will the site provide?
- Objectives are quantifiable measures of the goals
  - All, or only a subset, may also be the performance standards



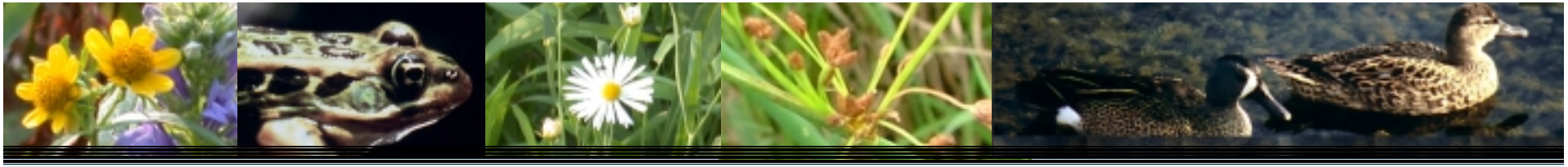
Features of good performance standards

- Quantitative
- Describe features of a quality wetland
- Specific and easy to understand
- Achievable



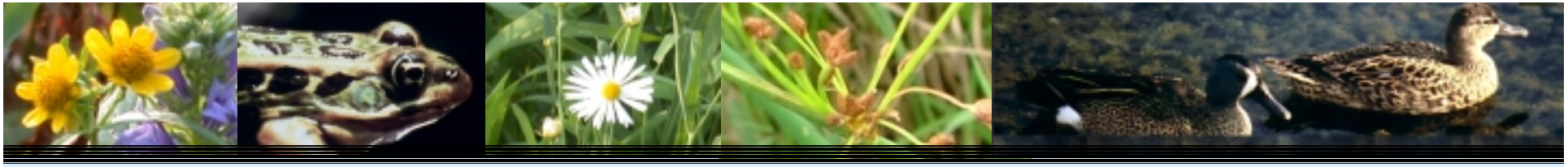
Performance standard requirements

- The number of acres that must be delineated as wetland by the final monitoring year
- Type of hydrologic regime
- Acceptable amount of cover by invasive vegetation



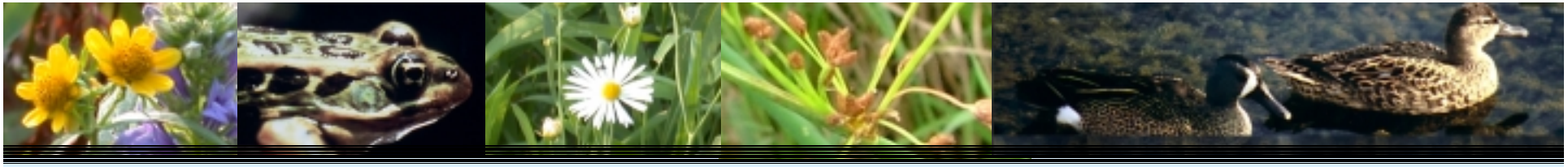
Other typical performance standards categories

- Improvement of native vegetation quality or diversity
- Wildlife usage
- Organize educational events or activities at the project site for the public



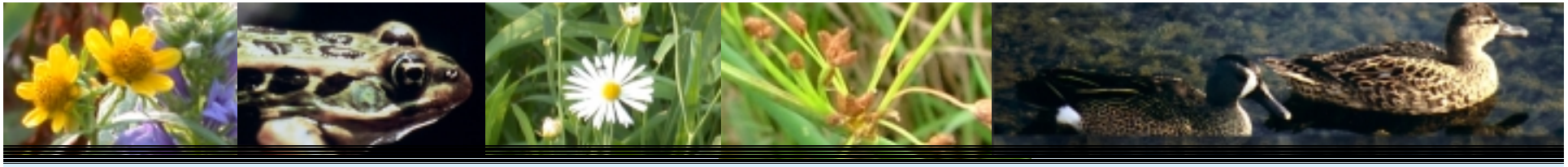
Not acceptable performance standards

- “The area will rebound with native species once the reed grass is eliminated.”
- “The site will be utilized by various species of waterfowl and shoreland birds”
- “3 years following construction the seasonal wetland area supports predominately hydrophytic vegetation with less than 40% of the dominant cover consisting of exotic and/or invasive species”



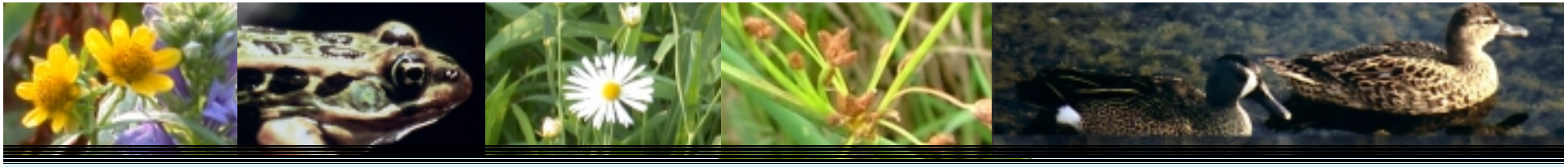
Acceptable performance standards

- “After 5 years the site will be delineated for wetland according to the 1987 COE manual and associated guidance documents. At least 2.5 acres of the project site will meet wetland criteria”
- “Prolonged ponding (inundated soils for more than 75% of the growing season) will be limited to less than 10% of the 6.1 acre wetland”
- “The total cover across the 3.2 acre site by invasive species (including but not limited to *Phalaris arundinacea*) shall not add up to more than 15% at the end of the 5-year monitoring period”



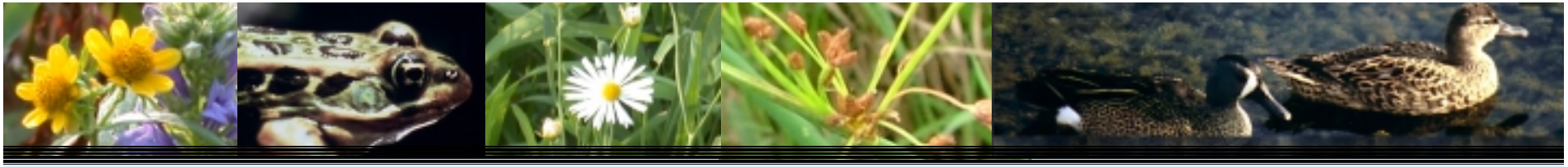
Acceptable performance standards

- “At least 7 of the 22 forb species and 8 of the 16 graminoid species listed in Table 2 that were recorded at a reference wetland will establish by year 3 and be found with a quadrat frequency of no less than 10% by year 5.”
- “FQI values and mean C as measured in all wetland communities must show an increasing trend from monitoring year 1 to 3 to 5, and must not decrease from monitoring year 5 to 7 to 9”
- “After 5 years the mitigation site is actively utilized by 20 species of bird with 4 species nesting.”

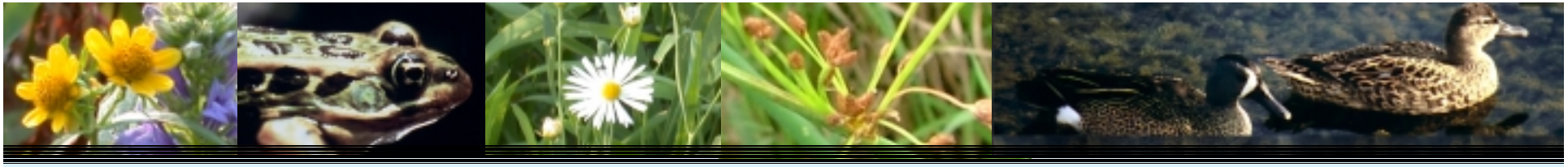


Acceptable performance standards

- “At least 4 academic, civic, tribal, environmental or non-profit groups will tour the site within 5 years to promote wetland protection and restoration.”
- “A sign will be placed on the trail near the mitigation site that will serve to educate the public about restoration and the value of wetland habitat.”

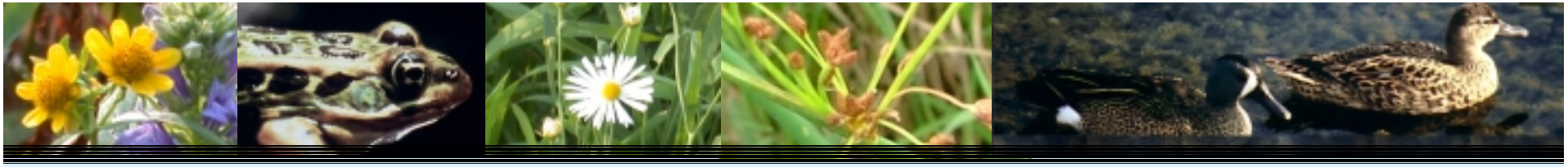


Monitoring



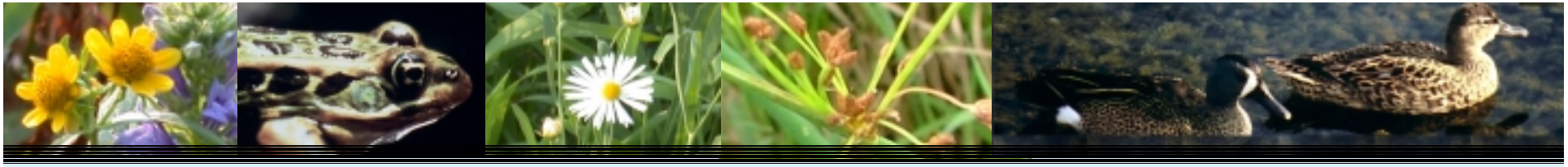
Purpose of compensation site monitoring

- Determine whether performance standards are being met
- Identify trends in wetland functions at the site
- Identify the need for corrective actions



Elements of monitoring plan

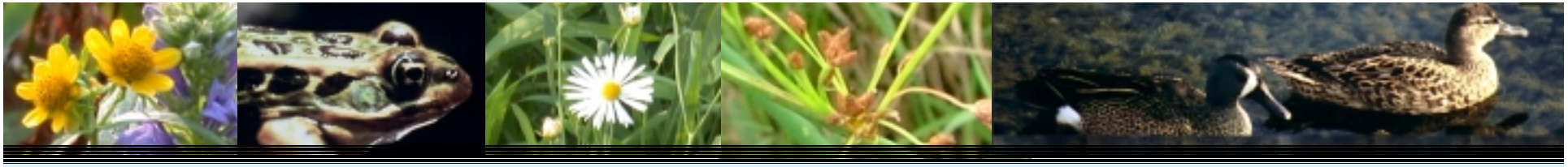
- Describe the monitoring timeline
- What data will be collected
- How data will be presented



What is the monitoring period?

- Begins after the site has been constructed and the as-built report has been submitted and approved by DNR.

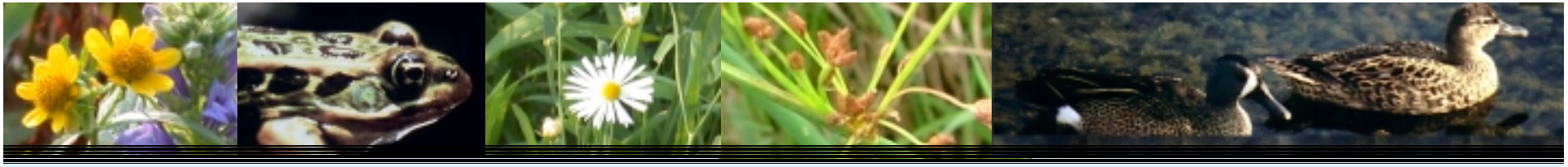
- Ends after the final monitoring report is submitted, and the site is inspected and approved by DNR.



Length of monitoring period

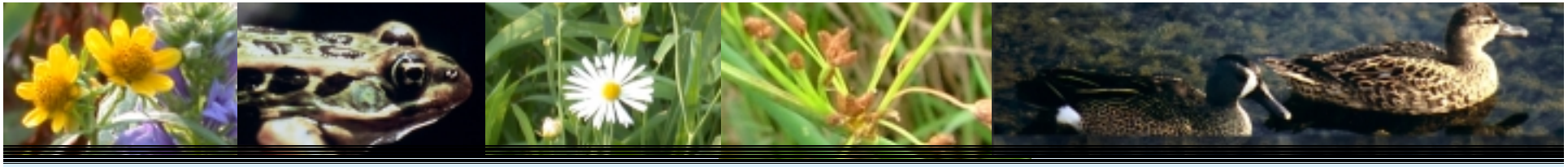
How many years of monitoring after as-built submittal?

- In most cases, five years
- If sites are large (bank sites), dominated by invasive vegetation, or the site plan proposes to restore shrubs or trees, 8 or 12 years may be required
- If the compensation site is < 1 acre, a caveat may be included that the monitoring period may be reduced from 5 to 3 years *if* the performance standards are met in 3 years.



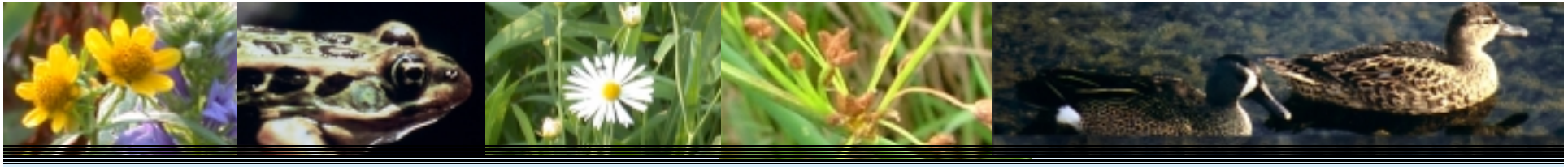
When to submit monitoring reports

- One monitoring report is due after each growing season of the monitoring period
- The monitoring plan should refer to each monitoring report as “year 1 monitoring report,” “year two monitoring report,” etc.
- An annual due-date for DNR receipt of monitoring reports must be established: ie. “no later than December 31 of each monitoring year”



Year-to-year differences in monitoring report content

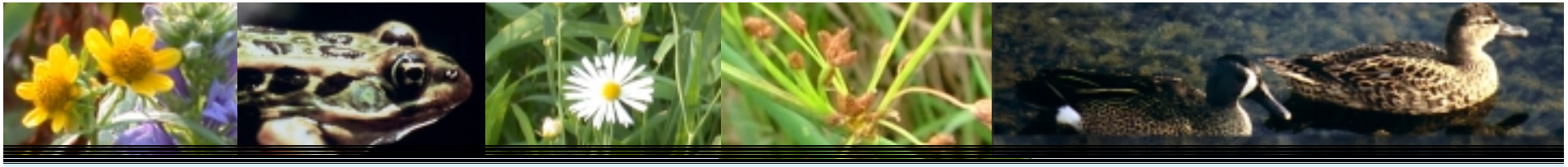
- Monitoring reports do not need to present the same type of data each year
- The monitoring plan must explain which data will be presented each year
  - A wetland delineation report is generally only submitted in the final year
  - Quantitative vegetation sampling is commonly done only every other year (typically years 1, 3 and 5)



Elements of monitoring plan

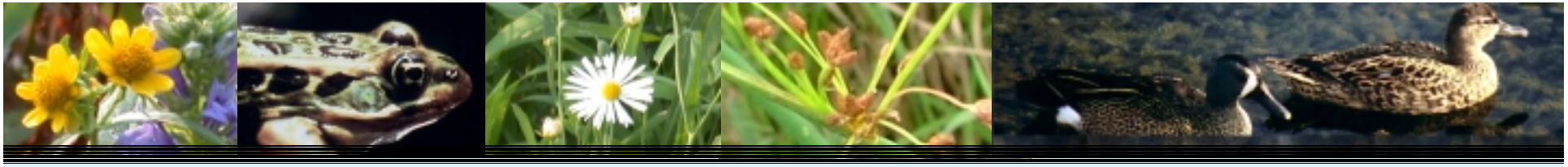
- Describe the monitoring timeline
- **What data will be collected**
- How data will be presented

Remember, data collection should be geared toward evaluating performance standards



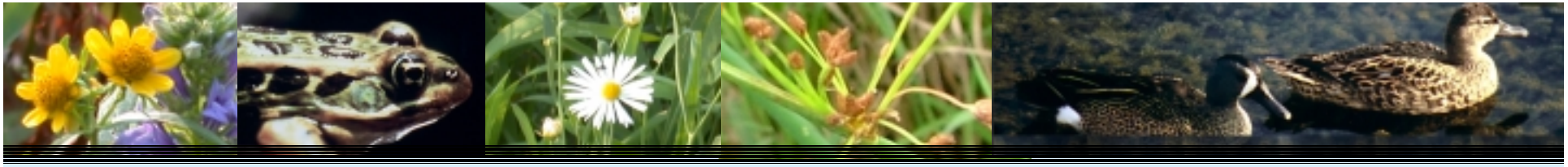
Data Collection: Qualitative

- Plant or animal species observed
  - Include an estimate of abundance
  - At least twice during the growing season
- Aerial photographs
- Photographs
  - Permanent photographic stations
  - Some should be taken from a high enough vantage point to see across the site



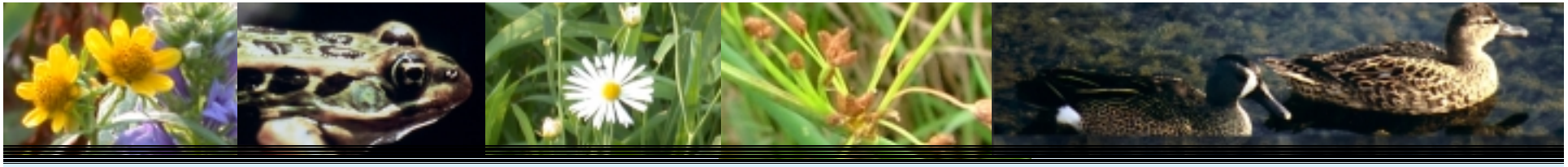
Data Collection: Quantitative

- Transect/quadrat vegetation sampling
  - What data will be collected from each quadrat?
  - Transect/quadrat placement?
  - How many quadrats?
  - How large will quadrats be?



Data Collection: Quantitative

- Hydrology monitoring
- Soil sampling
- GPS mapping

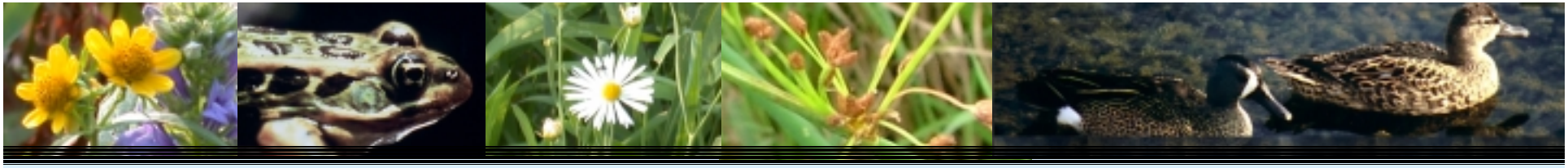


Elements of monitoring plan

- Describe the monitoring timeline
- What data will be collected
- **How data will be presented**

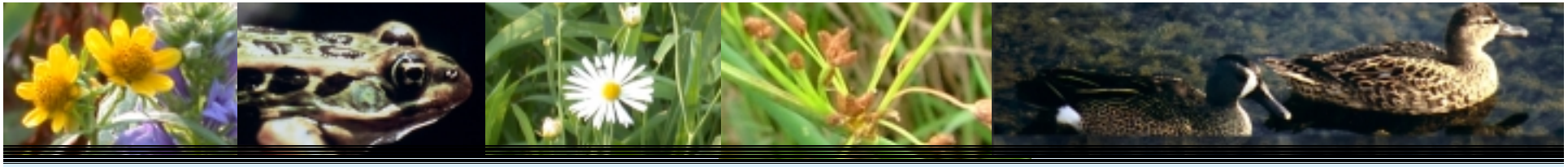
Be specific.

What will the content of the monitoring reports look like?



Data Presentation

- Maps must be included that show where data were collected and where invasive species were found
- Include dates (month, day, year)
- Include a description where each picture is being taken from and what is in the field of view
- Copies of data sheets should be included in appendices

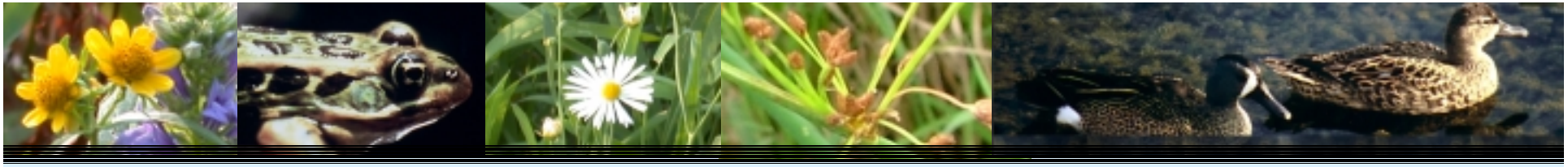


Presentation of Quantitative Data

Vegetative sampling: How will data be analyzed?

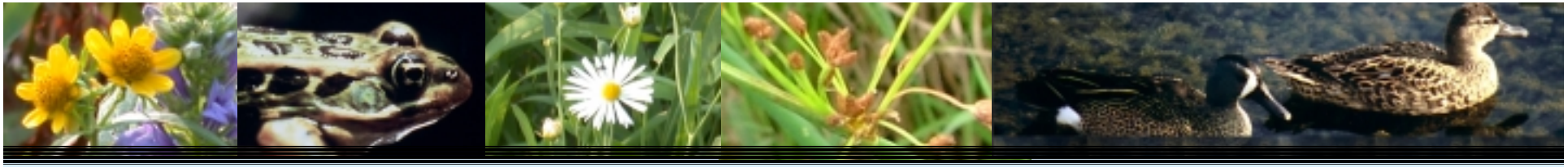
- Frequency of species occurrence in quadrats
- Mean species cover
- Native species richness
- Exotic species richness
- Importance values
- Mean coefficient of conservatism
- Floristic quality index

Briefly explain how these measures will be calculated — Do not lump data taken from different communities



In Summary

- Performance standards must be quantifiable
- The monitoring plan must be geared towards evaluating the performance standards
- A monitoring report is due at the end of each monitoring year
- The monitoring and maintenance period is usually 5 years, but may need to be longer
- Explain how monitoring data will be analyzed



Questions?